



National Aeronautics and  
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Goddard Space Flight Center

# Inside Wallops

Wallops Flight Facility, Wallops Island, Virginia

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*Doug Vandemark (Code 972) conducts last-minute checks of his equipment on the P-3B aircraft prior to departure September 5 to make measurements of Hurricane Erika. Basing in Miami, the P-3B will conduct flights to within 25-miles of the hurricane eye-wall. Called the Ocean Winds Program, the mission is supporting development of remote measurement of ocean winds using passive radiometer and active scatterometer instruments. The principal instruments on the P3-B are provided by the Jet Propulsion Laboratory and Naval Research Laboratory. Other participants include NOAA, University of Massachusetts, National Center for Atmospheric Research, and the Goddard Space Flight Center. PAO Digital Photo*

## **Voyager Spacecraft Still Going Strong**

Twenty years after their launch both Voyager spacecraft are now gaining on another milestone — crossing that invisible boundary that separates our solar system from interstellar space, the heliopause.

Since 1989, both spacecraft have been studying the environment of space in the outer solar system. Science instruments on both spacecraft are sensing signals that scientists believe are coming from the heliopause — the outermost edge of the Sun's magnetic field that the spacecraft must pass through before they reach interstellar space.

The Sun emits a steady flow of electrically charged particles called the solar wind. As the solar wind expands supersonically into space, it creates a magnetized bubble around the Sun. Eventually, the solar winds encounter the electrically charged particles and magnetic field in the interstellar gas. The boundary created between the solar wind and interstellar gas is the heliopause. Before the spacecraft reach the heliopause, they will pass through the termination shock — the place where the solar wind abruptly slows down from supersonic to subsonic speed.

## **Wallops News Shorts.....**

Four scientific balloons were successfully launched recently from Lynn Lake, Canada, and Palestine, Texas. The payloads were recovered.

A reimbursable 3.46 million cubic foot (MCF) balloon was flown August 24 for the Jet Propulsion Laboratory from Palestine.

Two 29.47 MCF balloons were flown from Palestine on August 25 and 28. The first was a high energy astrophysics payload for Dr. Elena Aprile from Columbia University and the second was an infrared astronomy experiment for Dr. Andrew Lange from the California Institute of Technology.

The Canada mission was a 39.57 MCF balloon carrying a cosmic and heliospheric physics payload for Dr. Paul Evenson from the University of Delaware.

Two NASA Terrier-Improved Orion sounding rockets were successfully launched on September 2 and 5 from Anna Plains Stations, Australia, in support of the Down Under Early Warning Experiment for the U.S. Department of the Army. Bruce Scott (Code 823) was the payload manager.

## **NASA Tests Concepts for Low-Visibility Airport Operations**

In late August NASA began demonstrating aircraft technology on the runways and taxiways of Hartsfield-Atlanta International that promises to keep commercial airplane traffic moving safely and efficiently day or night, regardless of visibility.

The technology is many technologies integrated into one overall system. On the ground is a system of surveillance sensors and other equipment developed by the FAA. Onboard the Langley Research Center's Boeing 757 research aircraft are the airborne systems and displays. A combined ground and airborne system can reduce the growing number of ground accidents and close calls by increasing the situational awareness of both pilots and controllers.

The research program calls for a 53 flight tests and demonstrations at Hartsfield-Atlanta. Demonstrations are to various airline and industry executives, officials of the FAA and other government agencies.

"The idea is to demonstrate the feasibility of safely performing low-visibility operations at capacities that currently are performed in clear weather," said Steve Young, flight test co-principal investigator from Langley. We've all experienced what happens to the air traffic system when weather slows traffic at an airport, and the trend is toward more traffic delays. This work has the potential to slow that trend as well as improve safety."

The research is part of NASA's seven-year Terminal Area Productivity program begun in 1994, led by the Ames Research Center. The program is part of the Agency's aviation system capacity program, expected to increase substantially aviation system traffic capacity in all weather conditions.

### **Monthly Morning Coffee**



The Monthly Morning Coffee will be held from 8 to 9 a.m., on Wednesday, Sept. 17, in the cafeteria, Bldg. E-2. All employees are invited to attend this informal session with Wallops managers.



## Weather Summary

### *The Tropical Month That Wasn't* by Jim Buchanan

August has historically been one of the busiest months for formation of tropical storms in the Atlantic Ocean. This year there were no tropical storm formations in the Atlantic during August. This is only the second time in the era of modern record-keeping that no storms have formed during August.

Several frontal passages seemed to come at just the right time, keeping weather very close to normal for the month. Several days of maximum temperatures below 80 degrees Fahrenheit held the average high for the month to 83.5 degrees, one degree below normal. There were only three days with a temperature higher than 90 degrees. In contrast, there were eight days when maximum temperatures were below 80 degrees. The high temperature for two days was 76 degrees. The cool air that was brought in behind the frontal passages helped keep the average low for the month to 65.5 degrees, almost 2 degrees below normal. The lowest temperature recorded was 59 degrees from August 24 through August 27. The overall average temperature for August was a cool 74 degrees, which is 1.4 degrees below normal.

Precipitation was above normal for the month. Measurable amounts of precipitation fell on seven days, with a total of 4.2 inches of rain. Normal measurable precipitation totals 3.8 inches. On August 12, 1.28 inches of rain fell. The heaviest amount to fall in a 24 hour period was 1.35 inches on August 13 and 14. This combined to give a three day total of 2.63 inches of rain. Thunderstorms occurred on six days.

The early Fall chill will be felt in October when the average monthly temperature should be in the neighborhood of 60 degrees. Usually the daily maximum average is 69.8 degrees and minimum is 51 degrees. This may not sound too bad, but while the first five days of October average a cool 63 degrees the last five days of the month average 54 degrees. October is normally one of the driest months with an average of 2.82 inches of rain fall accumulating on an average of 7 days of measurable rain.

With the onset of cooler weather, we will begin to use furnaces, fireplaces, and stoves. Make plans to have them cleaned and serviced now for safe operation when they are needed.

Don't forget that October is still in the tropical storm season. Pay close attention to any possible activity.

### *Saturday Youth Program Begins Soon*

The Saturday Youth Program (SYP) provides a means to motivate and introduce children to a variety of science and math careers.

The SYP targets children between the ages of 10 and 15 who are high-risk, financially disadvantaged and are interested in learning science through "hands-on" experiments. The program is limited to 30 students.

One of the goals of the SYP, sponsored by the Equal Opportunity Advisory Committee, is to motivate children to maintain their academic focus throughout school.

Employees who are interested in volunteering to help with the SYP, need more information or have information on community groups who work with children should call Lissette Martinez, x2281, Linda Thompson, x1072, or Roland Wescott, x1624.

### *Training Available*

The Wallops Fire Inspector is currently taking requests for fire extinguisher classes. The course is being offered to all Wallops employees and will be held on Thursdays from 1:30 to 3:30 p.m.

Personnel interested in the course should contact Theresa Kenney, x1707.

### *Blood Drive Donors Needed*

The American Red Cross Blood-mobile blood drive will be held September 19 from 10 a.m. to 2:30 p.m. in Building F-3.

The Red Cross urgently needs the support of the community and committed donors. They have reported there is a severe shortage of Type O blood.

To make an appointment, call the Health Unit, x1336 or x1766. Take note that these donations do not count towards the Eastern Shore Blood Bank requirements

### *Health Hints by Dianne Hargrove, R.N.*

#### *Tips to Help Lower-Back Pain*

Approximately six million people a year see a physician because of lower-back pain. Here are a few exercises recommended by the American Academy of Orthopedic Surgeons that may help. Always consult a physician before beginning any exercise program.

**Wall slides** - stand with your back against a wall with your feet shoulder-width apart. Slide down into a crouch with knees bent to about 90 degrees. Count to five and slide back up the wall. Repeat five times.

**Leg raises** - lie on your back with your arms at your sides and your lower back against the floor. Lift one leg off the floor. Hold your leg up for a count of 10. Return it to the floor. Do the same with the other leg. Repeat five times for each leg. If it is too difficult, keep one leg bent and your foot flat on the floor while raising the other leg.

**Back leg swing** - stand behind a chair with your hands on the back of the chair. Make sure your shoulders are back and you're standing up straight. Lift one leg back and up while keeping the knee straight. Return slowly. Raise your other leg and return. Repeat five times with each leg.

